



GUIDELINES FOR VIRTUAL CONFERENCING –

inspired by the
COPERNICUS Alliance Online Conference 2019



WHY WHAT WHO WHERE HOW

□ This paper presents guidelines to prepare, host and evaluate virtual meetings or conferences. It is based on experiences garnered during the COPERNICUS Alliance Online Conference 2019: “Reaching out for the Stars: Consolidating the HESD Constellation” and several other meetings that we facilitated online afterwards.

Online conferencing is getting increasingly popular and there are plenty of recommendations on how to do it out there. The same goes for software and tools that are more powerful and user-friendly than ever before and extremely dynamic in their development. Therefore, we don’t want to focus on any software in particular, but rather deliver general guidelines that aim to help organize different kinds of virtual events and pursue different purposes.

In the following we present five chapters:

- WHY** Facts about online conferencing including survey results
- WHAT** Type of event and format
- WHO** Organizing team & responsibilities
- WHERE** Software and hardware (hosting room)
- HOW** Actions before, during and after the conference

THE COPERNICUS ALLIANCE ONLINE CONFERENCE 2019 IN A NUTSHELL

The 3-day-event from 9-11 September 2019 was entirely hosted via Adobe Connect. Around 80 people from 30 countries on five continents participated actively and passively in different online session formats:

- Pre-recorded **videos** provided by keynote speakers (*“thought provokers”*) could be watched before the start of the conference and were accompanied by a **forum** in which viewers could formulate questions
- **Discussions** called *“deep spaces”* with keynote speakers (addressing the topics raised in the videos and the questions asked in the forum)
- **Presentations** of *“next practices”* followed by moderated discussions (seven presenters were selected after an open call and grouped into two sessions)
- **Interactive workshops** in small groups called *“co-creation labs”* (five parallel rooms; facilitators were selected after an open call)
- Virtual table called *“marketplace”* with **downloadable material** provided by the speakers (available before and after the conference)

The flexible design of the program allowed participants to come and go as they liked. Every registered person received a link to Adobe Connect which allowed them to access the virtual conference room(s) and join any session at any time. The conference was hosted and moderated from a room at the Centre for Development and Environment, University of Bern, Switzerland. All participants and speakers joined from external locations.



□ Nowadays, virtual conferences are more than an alternative to conventional face-to-face events. Especially in academic environments emissions resulting from traveling to conferences and meetings are being recognized as a problem in the light of climate change. Technology is no longer much of an issue and people are acquainted with online environments. Saving time, energy and money are other benefits that come with online conferencing. In fact, universities could save a lot of funds allocated to academic staff for conference trips. In addition, due to their inclusive character virtual conferences can attract international participants for local events. Universities can increase their outreach and position their research on an international stage. This also enhances the potential for new collaborations.

ADVANTAGES OF ONLINE CONFERENCING

- Saving **travel emissions**
- Saving **energy and waste** (fuel, electricity, materials, food)
- Saving **individual energy** (no booking, no travelling, no changes of time zones)
- Saving **time**
- Reduction of **costs for organizers** (no rooms, no catering, no travels, less staff required)
- Reduction of **costs for participants** (no travelling, no hotel, no fee)
- **Flexibility** to attend single sessions or the whole conference
- Possibility of **combining with daily routines** of work and social life
- **Inclusive** (people from all around the world can participate regardless of their origin, physical condition, family situation, financial and political situation, etc.)
- Easy **recording** of sessions
- Easy to enrich the program with **additional tools** (pre-recorded videos, surveys, etc.)

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When arguing in favor of virtual events one cannot neglect their limitations. They require precise program planning and demand a certain level of discipline from the participants. This leaves little space for the kind of unplanned spontaneous social interaction that is more likely to happen in face-to-face settings. Networking is easier when talking to somebody in flesh and bone. In addition to this restriction of social interaction, individual experiences such as getting to know new places and cultures are something that cannot be delivered online.

Whether virtual or face-to-face is the better choice depends on the type of event one wants to organize, its purpose and expected outcomes, and the addressed target group or expected audience. Based on several independent experiences (also outside the COPERNICUS Alliance) it seems reasonable to say that online conferences are an appropriate substitute for face-to-face meetings in *many* cases.

A survey carried out among the participants in the COPERNICUS Alliance Online Conference 2019 confirmed the above-mentioned arguments (k=27). A vast majority supported the suggestion to *alternate annually between a face-to-face and a virtual conference*. The survey provided additional insights: About two thirds of the respondents rated the *usability of the software* (Adobe Connect) with 4 or 5 points out of 5. *Interaction with other conference participants* was rated positively (4 or 5 out of 5) by half of the respondents. Over 85 per cent indicated a high to very high level of *satisfaction with the virtual format* (4 or 5 out of 5). *Overall satisfaction* with the conference was rated just as high by the same high percentage.

In the following sections, we highlight what we consider keys to success in the organization of online events.

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□ As for any kind of event, one of the first things to define is the target group. The event format and structure need to be designed accordingly. A couple of questions can help in the planning process:

- Webinar, 2-hour-workshop, 3-day-conference, etc.?
- Fully virtual or semi-virtual event?
- When to start, when to end each day?
- How many time zones to span?
- How many breaks?
- How many participants?
- Interactive sessions or keynote speeches?
- Invited speakers only or open call for contributions?
- Plenary sessions and/or parallel sessions in break-out rooms?
- Additional services or tools such as pre-recorded videos, forum, website?

The event format very much affects all steps that follow these first decisions; it is therefore worth spending enough time to think through the format and assess whether it is feasible in terms of the given budget and manpower.



□ As mentioned before, the organization of a virtual conference may require less human resources than a face-to-face conference, especially during the event. Nevertheless the workload must not be underestimated and a careful distribution of tasks and responsibilities between the members of the organizing team is essential. Several steps for the *preparation* of a virtual conference are similar to those for a face-to-face meeting.

TYPICAL TASKS FOR THE ORGANIZING TEAM

- **Program** development (format, schedule etc.)
- **Speaker** coordination (invitations, calls for contributions, selection of speakers/contributors/facilitators etc.)
- **Participant** management (registrations etc.)
- **Finance** management
- **Communication** (website, emails, newsletter, social media etc.)
- **Technology** (software(s), licenses; hardware/equipment for conference room)

Obviously, the bigger the team, the less work rests on the shoulders of individual persons. On the other hand, a bigger team demands more coordination among its members. In any case, there should be a *core team* that keeps an overview of all actions and is included in every communication concerning the organization of the event.

We strongly recommend maintaining the same level of information among all members of the core team throughout the whole organization period. Otherwise a permanent or temporary drop-out of one key person before or during the conference (illness etc.) can jeopardize the whole event! This especially concerns

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the technical part, which should not be the task of one person only: try to foresee at least two persons with the same level of expertise and understanding.

What comes as an additional challenge in virtual conferences compared to face-to-face events are technological issues (related to software and hardware). Especially the activities *during* the event must be planned in great detail, e.g. by writing a script. In particular, the roles of *moderators* and *hosts* during the event deserve special attention; these will be dealt with in the chapter **HOW**.



SOFTWARE

Various online conferencing tools are on the market, both for free and as paid/licensed services. They offer a lot of technical possibilities that serve most purposes well. Basic functions such as control of microphone and camera are quite similar and can be used intuitively. Choosing a software is therefore rather a question of personal taste and availability in the case of licensed services. Differences might be noticed in connection stability, video/sound quality and maximum number of participants who can be online at the same time.

TYPICAL FUNCTIONS IN ONLINE CONFERENCING TOOLS

- Microphone and camera control
- Activity buttons (raising hand, applause etc.)
- Attendee list
- File and screen sharing
- Chat
- Notes boxes
- Quizzes
- Polls
- Whiteboards

Enhanced options for hosts/administrators:

- Flexible screen layouts incl. templates
- Individual rights/roles for participants
- Opening and closing of rooms and break-out rooms
- Recording

What is more important than the choice of a specific software is the appropriate use of different functionalities and if necessary the combination of different applications in a clever and user-friendly way. In all cases, user-friendliness should be the most important criterion for choosing a solution and then shaping use of it during the conference or meeting. Remember that your audience is unlikely to be as technically savvy as you are and will require help with all steps that aren't completely intuitive or self-explanatory.

HARDWARE

Hardware requirements differ between *hosts* and regular *participants*. For the latter a few pieces of equipment are enough: A **computer** (desktop or laptop) with a stable **internet connection** (WIFI or cable), a **microphone** (built-in or external), **loud speakers** (or preferably a **headset**) and optionally a **camera** for video transmission (built-in or external). Although we don't recommend it, most applications can also be accessed via **smartphone**. In general, one can state that the better the equipment is, the better the online experience will be.

For the *host*, professional equipment is essential. Depending on the format and size of the event the quantity and arrangement of devices may vary. The hosting team needs to keep in mind hardware and software options and test what equipment is necessary and how to physically distribute it in the hosting room. Many institutions already offer fully equipped rooms for virtual conferencing, but if you do not have this option, it is worth spending enough time at an early stage to try out the set-up in detail.

EQUIPMENT FOR HOSTING AN ONLINE CONFERENCE (HOSTING ROOM)

- Computers/Laptops (e.g. main host, second host, beamer, presenter/moderator, backup)
- Microphone(s)*
- Loud speaker(s)*
- Headset(s)*
- Camera(s)*
- Tripod
- Big screen/TV-set or beamer
- Cables (internet, network etc.)
- Extension cords
- Spotlights

*or all-in-one device

Additional material:

- Tape (to make sure cables etc. aren't loose and can't be tripped over)
- Decoration for background (plants, posters etc.)
- Writing material
- Drinks and nibbles

A possible setting that could be replicated in any room is presented on the next page. The two photos give an overview of the hosting room as used for the CA Online Conference 2019. Important: The setup may be arranged in any form that allows the hosting team (incl. the moderator) to work comfortably. The position of the moderator should be defined first, depending on light conditions, background etc. What counts in the end is the image that goes out to online participants!

We recommend broadcasting the outgoing image (i.e. what conference participants see) on one screen (or wall if projected with a beamer) in the hosting room that is visible to all team members. In our case, we created a triangular setting of host computers, moderator's desk, camera and screen (blue triangle in photos) to enable discreet communication between moderator and technical team if needed.

The microphone(s) for the moderator should be as distant as possible from the host computers to avoid undesired background noise. Any microphone other than the moderator's should be muted.

The camera should be in a position and height that allows the moderator to look at the screen and into the camera at the same time (orange line in photo).

All devices should be connected to electricity rather than run on battery. Cables on the floor should be taped to avoid confusion and dangerous traps.

The windows should be closed to avoid noise from outside. Sunshades should be in place to maintain constant light conditions.

The door to the hosting room should either be locked or have a "Do not disturb" sign on the outside to avoid interruptions.

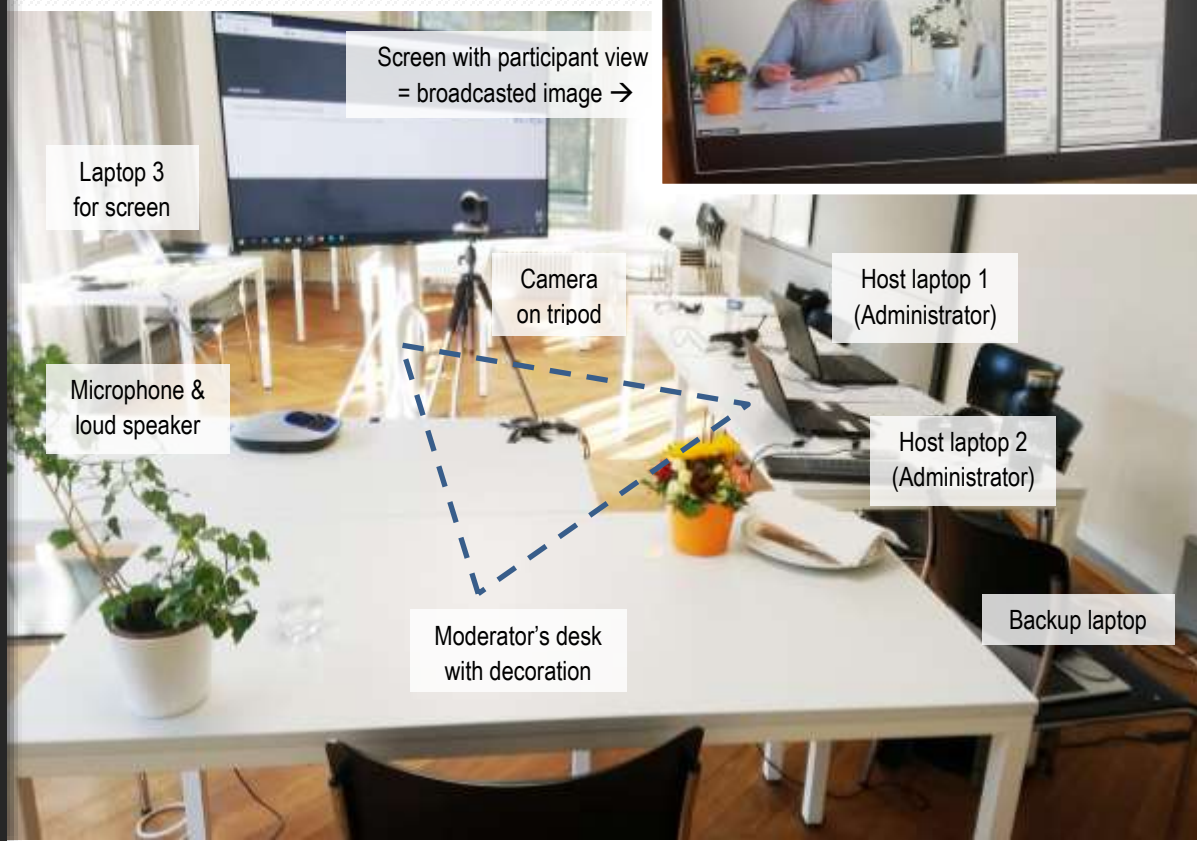
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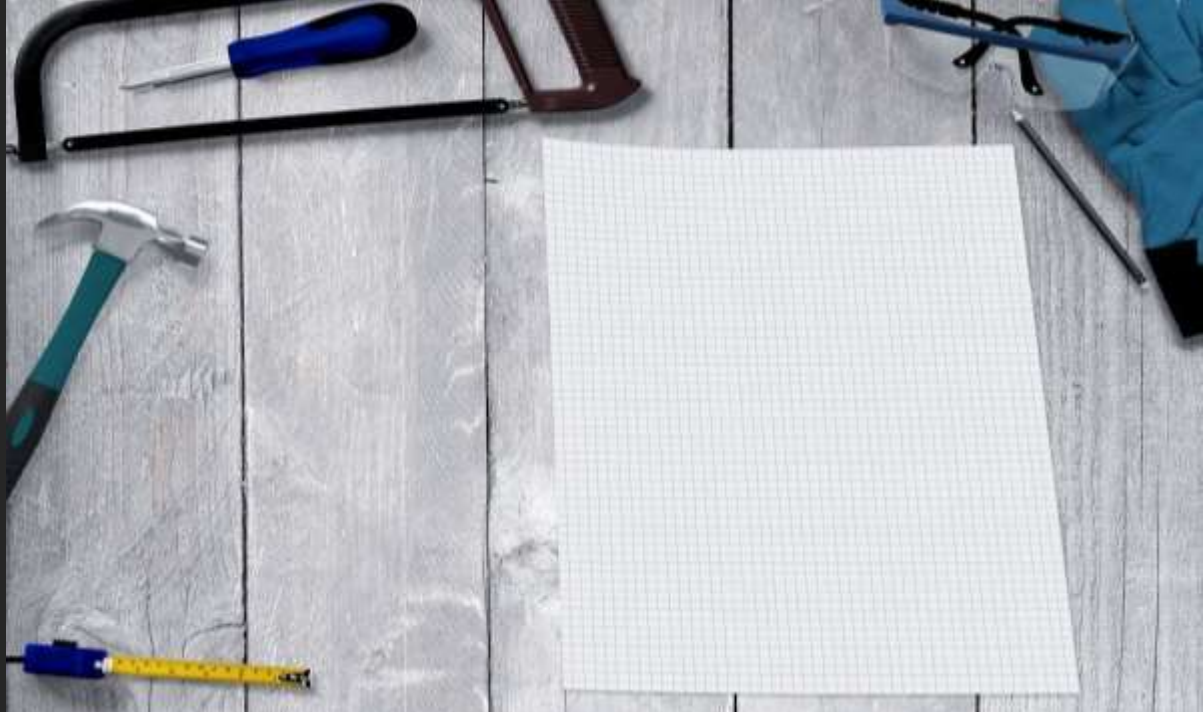
Hosting room during the CA Online Conference 2019:

↑ Host perspective

↓ Moderator's perspective



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□ A lot of details need to be considered to make a virtual conference successful. So how can it be done? Based on our experiences – mostly related to academic environments – in the following we provide recommendations (*Dos & Don'ts*) on actions to perform *before*, *during* and *after* an online conference.

BEFORE THE EVENT

Depending on the event's format and its requirements the organizers may need to prepare or purchase **software and hardware**. Some software products require different licenses depending on the number of participants.

What is just as important as the set-up of the physical room where the event is hosted is the **configuration of the virtual conference room(s)**. As a general rule we recommend preparing as many of these configurations as possible in advance – everything that saves time *during* the conference makes the life of the hosts easier. What needs to be planned carefully is: how many virtual rooms are needed, whether there should be parallel rooms, when they open and close, whether they are open or password-protected etc.

The **layout** of each room can be specified according to the scheduled program. A change of layout is usually also easily possible during a session. It is useful to pre-define various layouts (e.g. lobby, presentation, discussion – see images).



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Throughout the whole event we recommend including a **chatbox** so that people can communicate if there are any technical issues. Some software packages offer both a public and a private chatbox.

Any **files** that ought to be shared during the conference should be uploaded in advance in order to save time. Sharing uploaded files is preferable to screen sharing in terms of bandwidth. Uploaded files should be tested to check whether they work in the chosen software: not all data formats are supported, and some are automatically converted (e.g. animated slides or sound in presentations might not work).

To guarantee a good online experience hosts and **participants need to be well prepared**. Consequently, it is the responsibility of the organizers to instruct users properly prior to the conference. Therefore, a detailed **communication strategy** should be developed that defines *when*, *how* and *what* information is provided to *whom*. Important: If the event aims for an international audience, all times of sessions and meetings must be communicated with indication of unmistakable **time zones** (e.g. GMT, CET etc.). The table below shows selected items from the communication strategy for the CA Online Conference 2019:

When	What	Channel
30/04/2019	Save the dates	CA website CA newsletter
11/06/2019	Calls and registration open	CA website CA email list
26/07/2019	Update on speakers	CA website Conference website CA email list Registered participants
26/07/2019	Updated program based on accepted contributions	Conference website
10/08/2019	30 days to go	CA email list Registered participants
28/08/2019	Registration deadline reminder & final program published	Conference website CA website CA email list
30/08/2019	Take registration offline Adapt texts on websites	Conference website CA website
02/09/2019	Publish videos published and open forum + Marketplace launch	Conference website Registered participants
06/09/2019	3 days to go: Conference opening, encouragement to post in forum Provide Adobe Connect links and short guide	Registered participants
12/09/2019	Thanks for participating, link to survey	Registered participants

Depending on the planned level of interaction participants need to know how to use certain functions of the software. I.e. if there are only presentations (one-way communication) it is enough to listen and instructions can be limited; if participants are expected to collaborate with each other they may need to use their microphones, camera and perhaps tools such as screen sharing or whiteboards. We recommend providing a **short guide** or manual for the specific chosen software

early enough ahead of the conference. In addition, it can be useful to offer a (voluntary) **test session** so that everybody can get acquainted with the software and check whether their computer system is configured correctly (software updates, plug-ins, add-ons, drivers etc.). For all speakers and facilitators such a test session is obligatory!

JUST BEFORE THE EVENT

On the day of the event the **physical hosting room** needs to be prepared as planned. To avoid unexpected problems during the event we recommend:

- locking the door to the room or putting a “Do not disturb” sign outside,
- connecting all devices to electricity rather than running on battery,
- logging in at all computers with administrator accounts, and
- de-activating automatic switch-offs or screensavers on computers.

Once the **technical equipment** is in place all devices need to be connected and switched on. Referring to the setup as described above, this includes:

- **Host laptop/PC 1**
Hardware: headset, network cable
Role: logged in in virtual conference room as administrator with all rights
Tasks: main tasks such as file sharing, changing layouts, recording, monitoring participants’ activities, responding to chat etc.
- **Host laptop/PC 2**
Hardware: headset, network cable; connected to (central) microphone, loudspeakers and camera (for moderator’s desk)
Role: logged in in virtual conference room as administrator with all rights
Tasks: sharing video of moderator’s desk, responding to chat, supporting host 1 if needed
- **Laptop/PC 3**
Hardware: network cable; connected to TV-set/screen
Role: logged in in virtual conference room as regular participant so that participant’s view appears on screen
Tasks: none, can be unattended
- **Backup laptop/PC**
Substitution for host computers if there are problems

As next step the hosts can enter the **virtual meeting room** and prepare it. Important: All devices (headset, camera etc.) should have been connected to the computers before and must not be removed anymore. All un-used applications (email client, browser etc.) should be closed to maintain a stable internet connection and avoid interferences.

DURING THE EVENT

After finishing all preparatory tasks, the actual **hosting** starts. Hosting an online event is a demanding task. Therefore, the moderator should concentrate solely on his/her role while the hosts deal with the technical part. Wherever technology is involved things can go wrong; the hosts must therefore anticipate potential situations in advance. We recommend writing a **script** that lists all actions minute by minute. This is an example from the first day of the CA Online Conference 2019:

When	What	Who
08.40	Open virtual conference room	Host 1
08.41	Run Audio Setup Wizard in Adobe Connect	Host 1 & 2
08.43	Test camera position for moderation	Host 2
08.59	Select layout "Lobby" and turn on music in conference room	Host 1
09.00	Unlock virtual conference room (let participants enter)	Host 1
	Watch and answer chat	Host 1 & 2
	Watch out for speakers in attendee list; welcome them in private chat	Host 1 & 2
09.10	Record meeting	Host 1
09.15	"OPENING": change layout, start ppt	Host 1
	Switch on microphone and camera for moderator	Host 1
09.30/after OPENING	"DEEP SPACE": Change layout, forward ppt and move on to next slides when needed	Host 1
	Moderator position change to table + camera position change	Host 2
	Permit presenter rights to speakers, turn on their microphones and cameras	Host 1
after closing DEEP SPACE	Switch off speakers' microphones and cameras	Host 1
Moderator introduces next session	Forward ppt	Host 1
After introduction	Mute microphone; forward ppt and move on to next slides when needed; change layout to "Lobby"	Host 1
10.30	"BREAK": Stop recording	Host 1
10.35	Open break-out ROOM 2	Host 1
	Watch out for facilitators in attendee lists in both parallel rooms; welcome them in private chat	Host 1 & 2
10.54	Record meeting in both rooms	Host 1 & 2
10.55	Unlock ROOM 2 for participants	Host 2
11.00	Change layout in both rooms to start screen (video only)	Host 1 & 2
After introductions	Change layout; Turn on video for presenters ROOM 1: Change layout to pdf by presenter 1 ROOM 2: Change layout to pdf by presenter 2	Host 1 & 2
...

Online events should start and end according to the planned time schedule. Delays can be even more annoying online than in face-to-face meetings. Therefore, the hosts should support the moderator in striving to **stick to the schedule** and if necessary gently but firmly interrupt speakers when they exceed their time limit.

To maintain a high level of attention among participants and give them the opportunity to get a cup of coffee there should be **breaks** every 45 to 60 minutes.

Some situations during an online event deserve special attention and are described in more detail below:

OPENING

To start on schedule, the virtual conference room should open some minutes before the official start with a **lobby layout**: an image with the program to come, background music and a chatbox, for example. Whether the attendee list is visible to all participants is up to the hosts to decide: making it visible is likely to help attendees feel part of a group, but if the number of participants is very large, this will not be helpful at all.

Participants should be instructed in advance how to enter the virtual room (e.g. “first name, last name, institution”). Leaving academic titles out can contribute to a more inclusive atmosphere.

We recommend **disabling microphones and cameras** for all users at the beginning. Depending on the number of participants they can be **welcomed** in the chat when they enter the room. Also, a little small talk before the session starts can help create a friendly atmosphere. If there are technical questions in the **chat** the hosts should react quickly to solve them. If the number of participants allows it and they are experienced users and perhaps know each other, microphones can be opened for everybody right away.

At the beginning of the conference the **moderator** may explain some basic functions of the software, above all how to raise a hand (=indicate will to speak) with the corresponding symbol and how to use one’s microphone and camera once permission has been provided.

If you want to **record the event**, participants should be asked for their agreement or at least be informed, if not done already before the event.

DISCUSSIONS & INTERACTIVE SESSIONS

To avoid background noise and echoes, for any online meeting we recommend allowing **only one person to speak** at a time and muting all others in the meantime. To keep discussions organized, participants ought to use the tool to **raise their hand** if they want to speak. The moderator can then announce who is next to speak and the hosts can switch on the microphone and optionally the camera for this person. The **chat** can also be used to keep a discussion organized e.g. by posting the order of upcoming speakers. If the group is not too big and participants are disciplined the hosts can assign microphone rights to all participants and they can mute and unmute them on their own.

It is important that the moderator is always visible on video when he/she assumes an active role. In general, whenever there is something going on, i.e. somebody is speaking, at least **one camera should be active**. If a participant speaks and has no camera available the moderator should still be on video. Any static situation should be avoided except from the lobby at the beginning or end of a session.

Speakers should always **look into the camera lens** rather than at the screen. In this way they keep “eye contact” with the listeners and the online experience feels more natural. Consequently, listeners should do the same if their video is shared as well. Looking into the camera requires practice, so it is worth trying this out before the event starts.

All speakers should take care of the **background** in their image and ensure good **light conditions** when the video is active. Also **clothes** should be chosen carefully (no patterns, no distracting logos, appropriate colors etc.).

The quality of sound and video might not always be perfect during an online session. Any person who speaks should pay extra attention to **talking slowly and clearly**. If necessary the moderator might repeat or summarize single contributions by participants to assure that everybody has understood them; however, avoid being too obtrusive as a moderator, as this will give attendees the impression that what they say is not taken seriously.

Depending on the stability of the internet connection it may be necessary to limit the number of cameras active at the same time or to reduce their image quality in the settings.

Whenever somebody shares their **screen**, they should be prepared for this and not show any personal details on their computer desktops to other participants (passwords, private background image etc.).

BREAK-OUT ROOMS

If several sessions are running in separate rooms in parallel we highly recommend that **every room has one host**. Consequently, this implies that there should not be more break-out rooms than hosts available. It should also be clear whether the sessions are self-organized by the groups attending them or require a separate moderator or facilitator. Important: If a session is facilitated by somebody who is not present in the hosting room, the hosts must always be prepared to jump in and take over if the facilitator experiences technical problems.

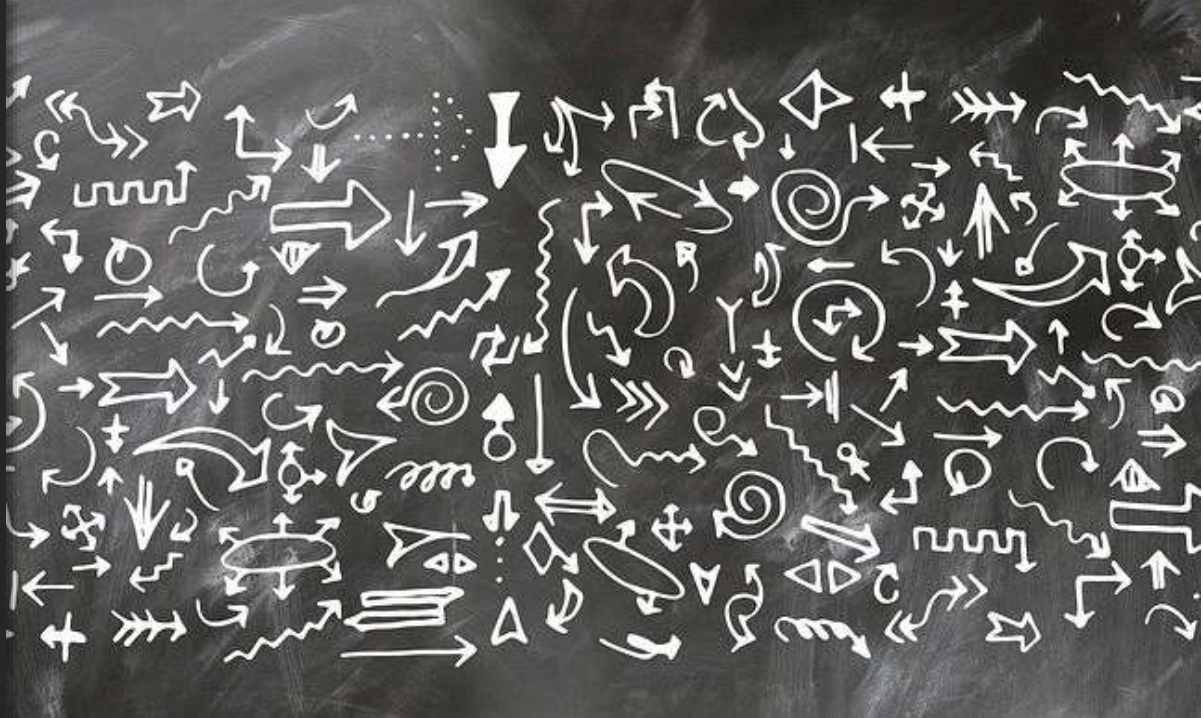
AFTER THE EVENT

When the event has ended, the hosts can either leave the **virtual room open** for future uses **or close it** so that participants cannot enter anymore.

To **save the results** of a session the hosts should consider using appropriate tools or foresee one person who takes minutes. Screenshots or text from note boxes and chats can easily be saved to an external file. If participants are to be involved more actively, they can be asked to leave their notes in an open shared file during or after the session. If the event has been **recorded** the file(s) can be edited (cutting, anonymizing participants etc.) and made available to participants.

If the organizers want to analyze the event and obtain feedback, participants can be invited to take a **survey**. The link can be provided directly after the event or later by email.

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USEFUL LINKS

- COPERNICUS Alliance Online Conference 2019 Website
→ [LINK](#)
- Grappling with flying as a driver to climate change: Strategies for critical scholars seeking to contribute to a socio-ecological revolution
Bear, H.A. (2018)
→ [LINK](#)
- Lessons learned from hosting a virtual conference
Burgess, M., Raley, E., Read, R.L. (2017)
→ [LINK](#)
- Towards Low-Carbon Conferencing: Acceptance of Virtual Conferencing Solutions and Other Sustainability Measures in the ALIFE Community
Fellermann, H. et al. (2019)
→ [LINK](#)
- Ten Simple Rules for Organizing a Virtual Conference – Anywhere
Gichora, N.N. et al. (2010)
→ [LINK](#)
- Scientific E-conference as a Tool of Development Students Research Competence: Local Study
Glazunova, O. et al. (2018)
→ [LINK](#)
- The unsustainability of academic aeromobility in Australian universities
Glover, A. et al. (2017)
→ [LINK](#)

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- **Changing university culture towards reduced air travel – Background Report for the 2017 Virtual Conference on University Air Miles Reduction**
Janisch, T., Hilty, L. (2017). Zurich, Switzerland: ETH Sustainability.
→ [LINK](#)
- **Signs of Change National Networked e-Conference: Highlighting emerging sustainability and social business**
Krumdieck, S., Orchard S. (2011)
→ [LINK](#)
- **Academic jet-setting in a time of climate destabilization: Ecological privilege and professional geographic travel**
Nevins, J. (2014)
→ [LINK](#)
- **Semi-Virtual Conference Guidelines**
Parncutt, R., Meyer-Kahlen, N. (2018)
→ [LINK](#)
- **Meeting in the Global Workplace: Air Travel, Telepresence and the Body**
Strengers, Y. (2015)
→ [LINK](#)
- **Addressing Greenhouse Gas Emissions from Business-Related Air Travel at Public Institutions: A Case Study of the University of British Columbia**
Wynes, S., Donner S.D. (2018)
→ [LINK](#)
- **Virtual Conference**
ID-Blog, ETH Zurich (2017)
→ [LINK](#)
- **A nearly carbon-neutral conference model. White paper/practical guide**
→ [LINK](#)
- **A clean, green science machine**
Nature editorial (2015)
→ [LINK](#)

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